

WHAT IS CLAIMED IS:

1. A composition comprising (1) a thermosettable resin selected from the group consisting of an epoxy resin, epoxy vinyl ester resin, unsaturated polyester resin or a mixture thereof and (2) an amphiphilic block copolymer dispersed in the thermosettable resin.
2. The composition of Claim 1 wherein the amphiphilic block copolymer is selected from the group consisting of poly(isoprene-block-ethylene oxide) block copolymers, poly(ethylene propylene-b-ethylene oxide) block copolymers, poly(butadiene-b-ethylene oxide) block copolymers, poly(isoprene-b-ethylene oxide-b-isoprene block copolymers, poly(isoprene-b-ethylene oxide-methylmethacrylate) block copolymers and poly(ethylene oxide)-b-poly(ethylene-alt propylene) block copolymers.
3. The composition of Claim 1 wherein the amphiphilic block copolymer is poly(ethylene oxide)-b-poly(ethylene-alt propylene).
4. The composition of Claim 1 wherein the amphiphilic block copolymer is present in an amount of from 0.1 to 30 weight percent based on the weight of the composition.
5. The composition of Claim 1 wherein the epoxy resin is selected from the group consisting of polyglycidyl ethers of both polyhydric alcohols and polyhydric phenols; polyglycidyl amines, polyglycidyl amides, polyglycidyl imides, polyglycidyl hydantoins, polyglycidyl thioethers, epoxidized fatty acids or drying oils, epoxidized polyolefins, epoxidized di-unsaturated acid esters, epoxidized unsaturated polyesters, and mixtures thereof.
6. The composition of Claim 1 wherein the epoxy resin is selected from the group consisting of the glycidyl

polyethers of polyhydric alcohols or polyhydric phenols having weights per epoxide group of 150 to 2,000.

7. The composition of Claim 1 wherein the epoxy resin is selected from the group consisting of 3',4'-epoxycyclohexylmethyl, 3,4-epoxycyclohexanecarboxylate, 3,4-epoxycyclohexyloxirane, 3,4-epoxycyclohexyloxirane, 2-(3',4'-epoxycyclohexyl)-5,1"-spiro-3",4"-epoxycyclohexane-1,3-dioxane, vinyl cyclohexene monoxide, 3,4-epoxycyclohexanecarboxylate methyl ester and bis(3,4-epoxycyclohexylmethyl) adipat.

8. The composition of Claim 1 wherein the epoxy vinyl ester resin is selected from the group consisting of epoxy vinyl ester resin containing 45 percent monomeric styrene, epoxy vinyl ester resin containing 50 percent monomeric styrene; epoxy vinyl ester resin containing 36 percent monomeric styrene; epoxy vinyl ester resin containing 30 percent monomeric styrene; a brominated vinyl ester resin containing 40 percent monomeric styrene; epoxy vinyl ester resin containing 45 percent monomeric styrene; and a fluidized epoxy vinyl ester resin containing 40 percent monomeric styrene.

9. The composition of Claim 1 wherein the unsaturated polyester resin has the general structural formula:

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$$(R-O-C(=O)-R'-C(=O)-O)_x(R-O-C(=O)-CH=CH-C(=O)-O)_y$$

wherein R and R' are alkylene or arylene radicals in the diol and saturated acid respectively, and x and y are variable numbers which depend upon the composition and condensation conditions.

30 10. The composition of Claim 1 wherein the unsaturated polyester resin is prepared by condensation of (a) ethylenically unsaturated dicarboxylic or polycarboxylic acids or anhydrides to impart the unsaturation, (b) saturated

dicarboxylic acids to modify the resin, and (c) diols or polyols.

11. A composite comprising (a) a cured thermosettable resin selected from the group consisting of epoxy resin, epoxy vinyl ester resin, unsaturated polyester resin or a mixture thereof having dispersed therein a polyethylene oxide-polyethylene propylene (PEO-PEP) di-block copolymer and (b) reinforcing fibers embedded in the thermosettable resin prior to cure.

12. A powder coating composition comprising the composition of Claim 1, and pigments, catalysts and additives.

13. A process for preparing cured, reinforced, toughened epoxy resin, epoxy vinyl ester resin or unsaturated polyester resin-containing laminates, said process comprising (1) blending a polyethylene oxide-polyethylene propylene (PEO-PEP) di-block copolymer with at least one curable epoxy resin, epoxy vinyl ester resin or unsaturated polyester resin; (2) impregnating reinforcing fibers with the resulting blend in (1); (3) laying up at least two layers of the impregnated fibers to form a laminate; and (4) heating the laminate at a temperature and time sufficient to cure the epoxy resin, epoxy vinyl ester resin or unsaturated polyester resin whereby a cured, reinforced, toughened epoxy resin, epoxy vinyl ester resin or unsaturated polyester resin - containing laminate is obtained.

14. A process for making a composite which comprises:

(1) contacting a reinforcing substrate with a tackifier at a temperature above the glass-transition temperature of the tackifier, so that the tackifier adheres to the substrate but remains thermoplastic and capable of further reaction, whereby a preform is made; and

(2) contacting one or more of the preforms made in step (1) with a matrix resin comprising a blend of a polyethylene oxide-polyethylene propylene (PEO-PEP) di-block copolymer and at least one curable epoxy resin, epoxy vinyl ester resin or unsaturated polyester resin under conditions such that the tackifier and matrix resin are cured, whereby a composite is formed.

15. Coatings comprising the composition of Claim 1.

10 16. Composites comprising the composition of Claim 1.

17. Electrical laminates comprising the composition of Claim 1.

15 18. Glass fiber sizing comprising the composition of Claim 1.

19. Gloss reduction aids comprising the composition of Claim 1.

20. Encapsulants comprising the composition of Claim 1.

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